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**Yabuki et al.**

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[54] **PATTERN EXTRACTING DEVICE AND METHOD TO EXTRACT A PATTERN FROM A COMBINATION AND VARIETY OF PATTERNS**

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120 page

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## [57] ABSTRACT

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[51] **Int. Cl.<sup>6</sup>** ..... **G06K 9/36**

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[58] **Field of Search** ..... **382/173, 175, 382/177, 178, 275, 282, 292, 317**

A character box extracting unit extracts a line forming a character box. Then, the character box intersection calculating unit calculates the intersection of the character box with a character pattern. An intersection corresponding unit associates intersections with each other based on the directional property of character lines, distance between the character lines, etc. An in-box character extracting unit extracts a virtual image according to the association information between the intersections. A character size evaluating unit obtains from an optional character string an average character size of a character including the virtual image, and extracts a true character pattern by removing a redundant virtual image based on the average character size. A character structure analyzing and evaluating unit obtains from a prepared table a true image corresponding to the virtual image and extracts a true character pattern, thereby correctly extracting the pattern from the image in which the line crosses the pattern.

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**22 Claims, 90 Drawing Sheets**

